Cost of Energy Review Team

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Response to: Call for Evidence: Cost of Energy Review. A Call for Evidence following the Helm Review
December 15, 2017

Uniper

Uniper is an experienced international energy company focused on power generation, energy trading, transportation, and storage, as well as a provider of specialist power engineering services. In the UK we own seven power stations comprising over 6GW of flexible installed capacity, as well as Holford gas storage site. As such Uniper is the fifth largest generator in the UK. Our employees, our experience and our assets make us a well-established business that makes an important, tangible contribution to Britain's security of supply and contributes to a cost-effective transition to a low carbon society.

We are pleased to take part in the consultation process. Our views in summary:

Three key elements are essential to ensure a framework which leads to cost effectiveness and investor confidence:

- Market transparency;
- Consistent treatment of competing technologies; and
- Independent systems operation.

Uniper supports the energy transition and agrees that there can only be a successful energy transition if security of supply is maintained at the same time as meeting the carbon budgets and improving air quality.

We welcome the Helm report setting out clearly the challenges of different technologies primarily carbon and intermittency. Air quality is an equally important dimension. To use a simple illustration – restrictions on when electric vehicles can be charged would frustrate their take up, and powering electric vehicles by locally installed peaking diesel plant does not address air quality.

Technologies have other specific characteristics which can provide services to maintain grid system security. How these services are procured will have a significant impact on overall cost.

In our response, we focus on electricity generation, but also touch on transmission and distribution as well as cross-cutting issues.

The longer-term challenge for generation is the difficulty in forecasting and realising income and therefore investment risk is increased. As an operator of conventional generation, we continually invest to deliver products and services required – to improve reliability, availability and flexibility. As gas fired capacity is needed but with shorter and less predictable running periods it is essential that the capacity market is an enduring part of the framework alongside the energy and flexibility markets. However, the current market design undervalues the contribution from existing power stations and does not incentivise the use of existing infrastructure.

Helm's proposal to bring inflexible renewables into the market is welcome, but there would need to be much more detail on how an Equivalent Firm Power auction would be designed before we could comment further. The current capacity market excludes those in receipt of subsidies such as Renewable Obligation payments, but does not exclude any specific technology. What needs to be clear is that the capacity market needs to secure demand throughout the year, not just a 30-minute stress event; design would need to ensure that specific characteristics of each technology are taken into account.

Competitive markets are central to delivering the most efficient and lowest overall cost energy system for business and consumers in the energy transition. Removing commercial and regulatory distortions which impact outcomes from the energy, capacity and flexibility markets would ensure a more efficient outcome. These markets must be technology neutral, identify the requirement in advance and procure on a competitive basis. Participants should be able to access multiple revenue sources, but only compete in the same market where a comparable service can be delivered.

Market Transparency

An effective competitive market requires equal transparency on the procurement and utilisation of balancing resources, regardless of their technology, connection level and the specific mechanism used.

The distinction in the regulatory arrangements between large generation plant that is connected to the transmission system and smaller distribution connected plant is becoming increasingly artificial. Many small participants are just as system relevant as one large participant. Whilst it is important to retain cost reflective network charging arrangements, the ability to offer flexibility services to different buyers should rely on a consistent set of requirements in terms of information to the market. The price, volume and location of each instructed MW should be visible to all market participants irrespective of size, technology and network that they are connected to.

At present, there is a disparity between the reporting of balancing actions and services procured from traditional providers and through the Balancing Mechanism (BM), compared with that on new services procured from new entrants and technologies. In March, National Grid reported that non-BM Short-Term Operating Reserve (STOR) availability and utilisation costs amounted to 54% of the reported cost of £72m for STOR in 2016/17. Yet market participants do not know when non-BM STOR plants are utilised and at what prices, whereas in the BM this information is available at the generating unit level.

The new regime must ensure that all equivalent information for participants is visible to the market to promote effective competition. Transparency and consistency are essential to ensure a more effective and dynamic flexibility market across the transmission and distribution networks. Systems operators should have a clearly defined set of standardised services and procurement principles. Setting out in advance the system needs and how services will be valued and assessed.

In addition to equivalent transparency of information, competing providers of services should have consistent rights and obligations, and equivalent visibility of information.

Consistent Treatment of Competing Technologies

There are a number of issues under the existing market framework that need to be considered in terms of achieving a more cost effective outcome.

The capacity market is the competitive market based mechanism to achieve security of supply; not just in peak periods, or under a stress event, but to secure the forecast demand alongside renewables throughout the year. It is one of the three pillars of the energy system that sits alongside the wholesale energy market and developing flexibility market of the future. Recognition that the capacity market forms part of the enduring energy landscape will provide stability and bolster investor confidence. The foundation provided by the capacity market to provide a stable and secure energy supply will ensure that the energy transition

can proceed at the desired pace; as it will ensure that sufficient capacity is procured on a competitive basis, therefore at the lowest possible cost, to be available to secure demand throughout the year for those times when the wind is not blowing or the sun not shining.

The CM auctions have been highly competitive which keeps the financial cost in check. However, market distortions, inconsistent environmental standards and market design (e.g. grid charging and procurement of ancillary services) potentially brings forward technology that is more polluting (diesel reciprocating engines) or provides non-comparable service (e.g. batteries and interconnectors versus gas CCGTs). We note the decision taken by Ofgem on embedded benefits, and the implementation of the medium combustion plant directive.

Gas fired power stations are expected to have an important, continued role to play in the energy transition through to 2050, albeit with an evolving role as levels of installed capacity remain but load factors continually decline. In this context, the economics of new build gas capacity over the full life of these assets remain challenging. Finding ways to use existing infrastructure would help to reduce the overall cost of the energy system over the long term. The re-use of suitable existing power station sites, with established infrastructure, grid and gas connections as well as established civil engineering and structures, through replanting of the generating assets could do this. Assessing ways to unlock this potential lower cost investment in suitable established power station sites could similarly lead to greater competition in the capacity market.

There are, currently, differences in treatment of new build compared to existing assets, which need to be reviewed to ensure that new build and existing compete on equivalent terms and the most cost effective capacity is bought.

One year capacity agreements for existing generation gives planning challenges whilst 15 year agreements for new build without any adjustment (e.g. price duration curve) is a distortion locking in potentially inefficient costs for 15 years. In addition, developers of new build are less exposed to penalties than existing plant, allowing for delays and delivery of less capacity than planned. CM rules allow new build to be delivered up to 2 years late (18 months plus 6 months appeal time) without having to pay a penalty; and if a new build project delivers a minimum 50% of capacity it loses income but does not have to pay a penalty. Treatment of unproven DSR is more generous with DSR CMUs able to reduce minimum delivery requirements to only 2MW up to 1 month before the start of the delivery year. Where these events do occur, speculative developer behaviour may have led to closure of otherwise cost effective capacity and replacement capacity would need to be procured at a later date and potentially at a higher cost.

The continued role of gas fired power stations with more volatile and less predictable running determined by weather dependent forms of generation means that long term viability of fast-cycle gas storage in the UK is important. That is not only because of its role in gas security of supply but in electricity security of supply and in dampening market volatility and shaving peak prices, which helps to deliver lower cost energy to business and consumers. The economic case for gas storage in the UK is under pressure, in part due to the effect of non-market reflective business rates liability, but also the absence of being able to monetise the capabilities that gas storage has to support the operation of the gas network and the potential to defer or provide a lower cost alternative to network investment. The growing importance of gas backing up renewables and as electrification of transport increases electricity demand combined with continued reduction in indigenous gas supplies, means that this service has even greater potential. We would therefore support development of the market framework to one which recognises the full contribution of fast-cycle gas storage to the UK energy transition.

GB generation competes with generation on the continent, where electricity markets are physically connected. Interconnection of markets is an important part of ensuring diversity of energy sources and can offer flexibility. However, interconnectors must compete with other technologies on a consistent basis and only where they offer a comparable service. An interconnector cannot independently provide generation capacity; it only provides transmission of the electricity from connected sources of generation.

Electricity flows across interconnectors according to market signals, and not in response to capacity market obligations. The question as to whether interconnectors could meet their obligation under a capacity market agreement needs to be considered further. Even if de-rating factors are representative of the overall contribution from interconnectors including an assessment of the impact of the growth of interconnectors on their contribution, the timing of flows is dependent on market conditions. Flows on the GB / France interconnector have seen more of a flow to France than to the GB in recent weeks and last winter (2016) due to market conditions, driven in part by unavailability of non-GB generation.

It may also be appropriate to review whether GB generation should continue to pay Balancing Services Use of System Charges, as interconnectors and non-GB generation do not pay this charge which means UK generators earn less than a similar continental generator would earn for the same service.

Equally, the UK's unilateral carbon tax affects the cost of GB generation but not non-GB generation or interconnectors yet they compete in the same market. We're surprised to see Helm's view that a price of carbon can be set by government. We would prefer to see carbon pricing through a market mechanism such as the EU ETS. There's a need to review the long-term suitability of the Carbon Price Floor, which was a tax introduced essentially to fill the gap and then transition to a more robust EU ETS. More consideration needs to be given to how the UK can achieve international climate change leadership without disadvantaging UK generation and industry either in the EU ETS or a traded scheme linked to EU ETS and other emissions trading markets; the wider the system, the more cost-effective the decarbonisation.

Independent Systems Operation

The energy transition clearly brings new challenges to grid operations and balancing supply with demand. We agree, therefore, that a grid systems operator has a greater role to play and that the distribution network operator also has a more complex and significant role. The integration of new technologies, e.g. storage, in the market framework can potentially avoid costly network reinforcement. However, both the distribution network and the transmission system provide the physical route to market for a range of technologies, as well as procurement of commercial services.

The regulated transmission and distribution network companies make decisions which affect the cost and therefore the competitiveness of storage and flexibility providers, for example when providing network connections. Hence, owning storage would make network companies a direct competitor in the markets they facilitate. This approach could undermine the government's objective of a transparent and effective energy market. Instead, independent systems operators should tender for such services.

Suppliers, aggregators, generators, and customers must be allowed to innovate and compete on an equitable basis in transparent competitive markets.

Uniper supports the move to place National Grid's System Operator (SO) function in a separate legal entity as a first step. The next step should be consideration of full separation of the SO, which would promote and enhance future flexibility markets. A similar model merits consideration for the lower voltage levels. However, for system operation purposes differentiating and separating out the operation of different voltage levels as we have today may not be the most cost efficient. Consideration could be given to synergies which can be extended across the transmission and distribution boundary to efficiently integrate distributed generation, storage, demand side response and prosumers into the market.

Systems operators should have a clearly defined set of standardised services and procurement principles. Setting out in advance the system needs and how services will be valued and assessed.